

System and Method for Automated Admissions Process Management

Cross Reference To Related Applications

This application claims the benefit of U.S. application number 60/484,034, filed
5 July 1, 2003, entitled "System and Method for Automated Admissions Process
Management".

Field of the Invention

The present invention relates to workflow processing, and more particularly to
managing the admissions workflow processing for educational and other institutions.

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Background of the Invention

High schools, colleges, camps, private schools and other institutions that routinely
accept and evaluate applications suffer from vast amounts of paperwork requiring quick
and efficient processing. Oftentimes, such paperwork is received in a very short time
15 frame – usually around an application deadline – and the tasks of repetitively keying in
data and managing such paperwork are cumbersome and costly. Additionally, while
schools and other application-handling entities frequently have their own databases
(electronic or otherwise) of student or applicant information, they are ill-equipped to
handle the addition and transfer of new/updated information from outside sources to such
20 databases.

Summary of the Present Invention

One aspect of the present invention provides a full-fledged suite of office
automation tools including a web front-end to assist with many of the common and not-

so-common admissions office tasks. The present invention assists admissions offices in managing data and processes from applicant input through storage and evaluation. In one embodiment, the present invention can be integrated easily with legacy systems, such as an offline admissions database, for example. The present invention also allows 5 admissions office personnel the ability to customize processing, management and personalization of information. Further, using the present invention, communications to applicants can be automatically personalized, and admissions personnel can create and retrieve personal notes related to applicants for use in applicant evaluations and interviews.

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The present invention benefits current admissions and application processing systems through its web-enabled, browser-based application submission and status inquiry capabilities for applicants, and similar web-enabled, browser-based application processing, scheduling, personalization and review capabilities for admissions offices.

15 The present invention thereby helps automate admissions and application processing for entities and offices of all types.

Brief Description of the Drawings

Fig. 1 is a block diagram showing several user types interacting with the system 20 of the present invention.

Fig. 2 shows a block diagram of the components of one embodiment of the system of the present invention.

Fig. 3 is a sample architecture diagram showing one architecture for implementing the system of the present invention.

Fig. 4 is a flow chart indicating a method for processing applications in accordance with one embodiment of the present invention.

5 Figs. 5 and 6 show sample screen interfaces for use in connection with the present invention.

Detailed Description of the Preferred Embodiments

Figs. 1 and 2 are block diagrams representing the interaction of several user types 10 with the system 10 of the present invention. Users can include applicants 14, office personnel 16, and admissions committee personnel 18. In one embodiment, alumni, parents and school principals can access the system of the present invention as well.

Access can be provided through a network 15 such as the Internet using a 15 standard web-based browser as is commonly understood in the art. Access to the network can be via cable modem, dial-up modem, satellite, digital subscriber line or any other generally available access means. In one embodiment, applicants can access the present invention through the Internet, while admissions personnel access the present invention via local or wide area network. Thus, the present invention can be made a part 20 of the admissions office information system backbone, accessible via local area network using a client workstation or PC, with remote access available when the office personnel are not in the office.

Applicant interface 14 can be used by applicants to send application-related information to a management component 20 of the present invention. Such application-related information can be an application itself or supporting elements thereto, and such information can be called primary application-related information. Examples of primary application-related information can include, for example, applicant identification information, an online application, a transcript, a letter of recommendation, a report card, a photograph, a video clip, or an audio clip. The receipt and storage of applicant identification information by the present invention assists in customizing and personalizing communications to applicants.

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Paper-based information that is not sent electronically to management component can be mailed by applicant, scanned by the admissions office and made available for electronic manipulation and review. Applicant interface 14 can allow the applicant to perform various tasks related to the application process, including application submission using online forms or a compact disc, for example, as well as printing, saving and restoring an application. Applicants can further schedule interviews, tours and/or visits using interface 14. As shown in the sample user interface 50 of Fig. 5, a student can select either a group of available times and dates (such as available time selection 52) or a particular date through text input as at 54 or by selecting a date on calendar 56. The user's selection can be communicated to management component 20 so that administrators and other personnel can become aware of the user-scheduled visit.

Management component 20 can receive the primary application-related information and store it in database 25. As different content types can be sent via applicant interface 14, it will be apparent that the management component is capable of handling a variety of file types, including text files, proprietary document file types (e.g.,

5 Microsoft Word™, PowerPoint™), video files (e.g., mpeg, avi), image files (e.g., jpg, img), and audio files. As shown in Fig. 2, management component 20 can include a web server 202, application server 204 and database interface 206 as is understood in the art. In one embodiment, as will be described more completely hereinafter, application-related information received online can be exported into an institution's database, such as a

10 Blackbaud™ database, manufactured by Blackbaud, Inc. of Charleston, South Carolina.

Web server 202 can serve the interface pages from applicant component 211, administration component 213 and reviewer component 215, depending upon which entity type is accessing the management component. It will be appreciated that applicant

15 211, administration 213 and reviewer 215 components can be provided through application server 204 via web server 202 or can be client applications stored locally on client devices 14, 16 and 18. As shown in Fig. 2, application server also includes form generation component 210, content management component 212; access control component 214 and communications component 216.

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Admissions office interface 16 can allow admissions office personnel to access administration component 213 to enter inquiries, print applications, create CD-ROMs and e-mail applications, for example. A form generation/management component 210 of the

present invention allows office personnel to generate personalized labels and letters, such as reminder letters, confirmation letters and status letters, for example. Such generated information can be called secondary application-related information. In one embodiment, customized and personalized communications are automatically created by management 5 component upon receipt of application information from an applicant. A content management component 212 of the present invention allows personnel to view, edit, delete, organize, describe and search the primary application-related information. Both office personnel and applicants have access to a status check mechanism via their respective interfaces.

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The management component of the present invention can store and monitor status information pertaining to individual applications so as to provide updated status information when queried by applicants, or alternatively when instructed to notify applicants by office personnel. Notifications are also examples of secondary application-related information. As shown in interface 60 of Fig. 6, office personnel and/or 15 administrators can view a calendar to see what their schedule calls for on a given day, for example. Additionally, schedule information can be called up to allow the user to determine available times or dates for an interview or prospective student tour.

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In a further embodiment of the invention, the user interfaces can be made available to wireless devices, such as personal digital assistants (PDAs), wireless phones, and other similar devices. Using such interfaces, an admissions personnel might download their schedule information along with personalized notes about a particular

applicant, wherein the notes can appear in schedule format. In this way, the admissions personnel might improve the quality of an interview with a prospective candidate by having candidate notes available and at hand during an interview, for example.

5 An access control component 214 can allow an office administrator to control access to content by giving permissions and access levels to various administration types. For example, one administration type may be provided with access to view applications and provide status reports. A second administration type can be provided with access to review and evaluate applications and provide notes thereto.

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15 Communications component 216 can provide a means for delivery of messages related to applications. For example, communications component can deliver status information to applicants, and can deliver notifications to admissions office personnel notifying them that an application is available for review, or that an application has been assigned to that member, for example. Such notifications are further examples of secondary application-related information. Communications component 216 can facilitate the preparation of information to be sent offline (e.g., printing labels for delivery via traditional mail) and sending information online (such as through e-mail or facsimile).

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In one embodiment, the present invention can be integrated with a Dymo Label printer for printing labels for mail delivery. This embodiment requires the student information table to be enabled, as is described hereinafter. In another embodiment, the

present invention can be integrated with Microsoft Word™ or Excel™, which can also require the student-info table to be enabled. The office user can select an arbitrary number of entries or groupings from the list and print any type of letter or generate different kinds of Excel reports. In one embodiment, a textual summary report and a 5 statistics report are provided.

The administrative personnel can also select an arbitrary number of applicant entries from the list and set their current status or show school codes. Showing school codes shows the passkey for all schools currently known in the student information table.

10 The passkey can be used by principals accessing the system of the present invention for a status view, for example. The status view is a way for students and/or principals to log in and view their current status (or their students' status). An encrypted passkey can be defined for each user and for each school.

15 Each user can sort columns by representative field, and can edit what fields are shown on his or her list view. In one embodiment, authorized users can edit configuration files to establish field parameters and notification rules. Entries can be viewed, edited and deleted. A configurable number and type of items can be added to each entry. The user can also generate import data that can then be imported into a 20 separate database, such as Blackbaud™, for example. In one embodiment, the data is formatted as comma-separated values.

The admissions or reviewer interface 18 allows the admissions or applicant evaluation personnel to access reviewer component 215 and view primary application-related information, such as a list of submitted forms. Navigation between different types of submitted forms (e.g. applications and inquiries) is through menu selections, hypertext links and other navigation tools commonly known. In one embodiment, the administration interface is only viewable by authenticated users. Review personnel can retrieve primary application-related information from storage, view and print the application-related information, annotate it, update the records, and provide a status for the applicant (e.g., accepted, rejected, wait listed). Any comments, status or modifications are stored with the record of application-related information.

In one embodiment, management component includes programming which allows office personnel to pre-establish which office member and/or reviewing member will be assigned a particular application for review. For example, a first member may be assigned all applications related to applicants for ninth grade, while a second member may be assigned all applications for a different grade. Applications can be segmented according to applicant age, geographic location, and other fields associated with applicants. E-mails can be sent to the admissions office dependent on an embedded parameter, in one embodiment. The embedded parameter can switch target personnel, such as by, for example, having e-mails related to a certain class of individuals go to a first admissions personnel and the remainder go to a second admissions personnel, as described above.

An example architecture of the present invention can appear as is shown in Fig. 3. As shown in Fig. 3, applicant 14 can send application-related information through a network such as the Internet 12 to management component 20, as described earlier. Management component 20 can receive and validate the data and store the data in 5 database 25. Admissions office personnel 16, 18 can retrieve the information from management component 20 and store it locally in the institution databases 27, and can further export the data to database server 32, which can be a Blackbaud™ server as described earlier.

10 The data can be transmitted to the admissions office personnel by download or via the server 20 of the present invention. Once the data is on the client workstation, it can be imported into the separate database. If configured to use file download, the present invention generates the files and displays a screen where they can be downloaded to the local workstation (e.g. 16). If configured to interface with server 20, the file data is 15 automatically transmitted to the local workstation within the HTML document. The server application can then parse and separate the data into the necessary files.

Fig. 4 shows steps involved in application processing in accordance with one embodiment of the invention. An applicant can submit applications and inquiries to the 20 application component using the application interface as described above. The application component of the present invention fields the online forms as at 70, and validates, processes and stores them in a database as at 72. Confirmation emails can be sent as at 74 according to criteria defined in the configuration file and based on data

submitted by the user, for example. Notification e-mails to admissions office personnel can also be sent as at 80. In one embodiment, e-mails can be sorted and delivered to different personnel based on a variety of criteria. For example, e-mails for children under the age of seven can be sent to a first individual, and e-mails related to applicants seven 5 years of age and over can be delivered to a second individual. If specific personnel are to be notified as at 76, the determination takes place as at 78. Online forms can be single or multi-page forms, and any documents requested can be received via e-mail attachment as is known in the art. As described above, users can upload files with their form (e.g. pictures). Once the appropriate admissions reviewer personnel receives the application- 10 related information, he or she can review the application and establish a status for the applicant. The applicant's initial status is recorded as at 82.

The various components of the present invention are built to be extremely flexible, with settings configurable via external configuration files. In one embodiment, 15 the present invention can be developed using Perl™ and can be implemented on an Apache™ web server running the Linux™ operating system or a Unix-based operating system. The present invention can further be developed using Server Side Includes (SSI) technology, which allows for embedding certain objects or scripts within an HTML document that is parsed and processed by the web server before passing to the client's 20 browser. The present invention can further include a client-side application, which can be written in C+ or C++, for example, simulating both a browser and an HTTP server, wherein the application can incorporate additional functions as desired. The student-

mode client application can allow a student to save/load his work, print his application, and submit the application online.

In one embodiment, the present invention includes a data bridge

5 component for interfacing with a legacy applicant database, such as Blackbaud™, for example. Blackbaud™ is a database common in schools for maintaining student information, records, etc. The present invention provides a utility for importing data into Blackbaud™. The present invention further has the capability to use MySQL™ as the backend database. MySQL is a popular, fast, easy-to-setup, open-source database that is
10 often used as a backend for web-based applications. In another embodiment, the present invention can interface with a CSV (comma-separated values) type database, often regarded as a pseudo-database. For web-office systems running with a MySQL™ backend, it is possible to integrate Microsoft Access™ as a front-end to all tables in MySQL™ using MyODBC™, for example.

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Access and navigation

The present invention defines user classes to help control access and capabilities for different types of users. In the preferred embodiment, all users must be authenticated by the system server before accessing any of the system components. There are no “non-
20 logged in” user types. The present invention can accommodate at least three classes of administrative users. First a Guest user is the most limited account, which allows the user to view the entry list for all types and view specific entries. The Office user can be allowed all capabilities except for student information status changes and in some cases,

configuration file changes. The Administrative user is the most powerful user type, and can perform all tasks without limitation.

User access control can be provided to the Administrative user by the 5 administrative component or, if using a Unix system, by using the “user/group/all” notation. In one embodiment, a separate server can be configured onsite to run as a separate user and to look for “.htaccess” files in OFFICE and DATA directories.

The present invention can include HTML (html/) files to provide forms and 10 navigation for the various software components. Also, CGI-BIN (cgi-bin/) scripts can be employed to handle the form submissions from the HTML components or aid creation of the HTML forms (Server-Side Includes), as is well understood in the art. The data files, or files needed by the present invention to run include configuration files, template files for a variety of tasks, and auxiliary scripts to be run, for example. The admissions or 15 admin file can houses the main script(s) for the present invention and can include an HTML “navigation” page and the main web-office software.

Data management

The present invention can accommodate the backend database virtually 20 transparently. In one embodiment, the connection string in the configuration file defines the type of database. With CSV databases, if no user is specified in the configuration file, the present invention attempts to connect without a username/password. For other

databases, if a user is specified in the configuration file, the present invention attempts to connect to the database with the username/password.

With regard to database design, the present invention defines several types of
5 tables that generally correspond to form types. The present invention is flexible enough to extend the number and types of tables it can handle. The type of the table defines the type of fields file it expects to read. The INQUIRIES_TABLE is usually used to handle inquiries. It can be generalized as the most basic form of table. Form data comes in, gets stored, can be viewed/manipulated, and can be imported. This is considered a “raw data”
10 table type.

The APPS_TABLE is usually used for applications. It can be generalized to be an extended version of the INQUIRIES_TABLE with the added ability to handle uploaded binary objects (e.g. a picture). This is also considered a “raw data” table type.
15 The ALTS_TABLE is used to handle multiple page forms. It is not a table per se, but a collection of tables, one for each page in the form. The ALTS_TABLE is mutually exclusive from the rest of the tables. This is also considered a “raw data” table type.

The STUDENT_TABLE is used to handle processed data from “raw data” tables.
20 It is generated on demand by using a “raw data” table as its source, processing/formatting the data, and storing it. If there are multiple raw data tables, the fields the STUDENT_TABLE uses as input from those tables must correspond across all tables. This is considered a “high level” (or auxiliary) table type.

The fields' files are a collection of files that correspond to various tables or tasks. File name usually can be identified from the format "DATA/*_fields". All fields are 1 per line. Blank lines and lines that begin with '#' are not parsed. A blank value can be 5 interpreted as a 0. Each line can comprise multiple configuration parameters, separated by "::".

The database Import Format Mapping Files IFMF is a file that maps data from a "raw data" table to a format that can be imported into a database such as Blackbaud™, 10 for example. Three supported types of importing include biographical information, activities and hobbies, and relationships.

Interfaces

15 The dynamic web pages created by the present invention use two files to create a standard look and feel across all of the pages. The header file is printed before the generated dynamic output. Conversely, the footer file is printed afterwards. The present invention can make reference to items that need to be defined in an included stylesheet. An activity mapping file can be used for importing to map "activities" from a "raw data" 20 table to a format that can be imported into an external database such as a Blackbaud™ database, for example. The e-mail script is a separate script that can be used to send e-mail. The log file can be used in two modes, normal and extensive (usually reserved for

debugging). All tasks, except the email script use the normal log file. In one embodiment, the email script uses a separate log file.

The master configuration file is what defines the current setup of the present invention. A unique identification file can be used to assign a unique identifier to every submitted entry. The file consists simply of a single line with an arbitrarily large number. If importing into Blackbaud™, for example, it must be a number that Blackbaud™ can handle.

10 In one embodiment, admissions personnel can customize aspects of the various components of the present invention, including the applicant component, management component and communications component. For example, the admissions personnel may decide to have all applicant communications occur electronically via communications component, or to require personnel review of any outgoing status communication from 15 the management component, or to allow non-applicants, such as parents, to access status information via applicant interface. In one embodiment, any such customized configurations are established via an admissions personnel interface accessible using a client device. Customized configurations can relate to business rules, software integration, hardware integration or database integration, for example. In this way, the 20 invention provides a complete, integrated, customizable, and personalized solution for applicants and admissions personnel.

The invention may be embodied in other specific forms without departing from the spirit or essential characteristics thereof. The present embodiments are therefore to be considered in all respects as illustrative and not restrictive, the scope of the invention being indicated by the claims of the application rather than by the foregoing description, 5 and all changes which come within the meaning and range of equivalency of the claims are therefore intended to be embraced therein.

What is claimed and desired to be secured by Letters Patent is: